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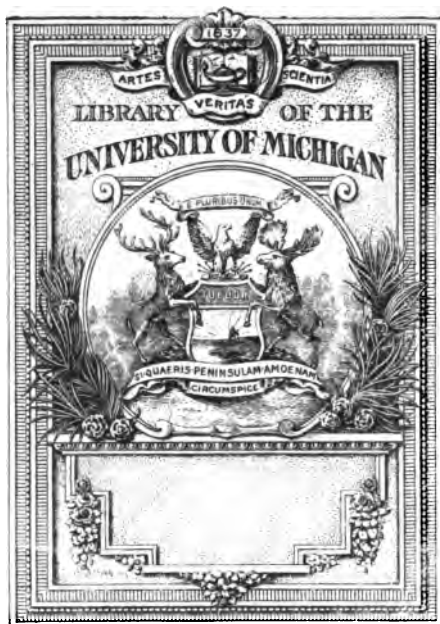
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By EDMUND J. JAMES, PH. D.

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The Study of Statistics in Colleges.

BY HON. CARROLL D. WRIGHT,
United States Commissioner of Bureau of Labor.

Paper read at the joint session of the American Economic and Historical Associations, at Cambridge, Mass., May 24, 1887.

America has no counterpart to the continental school of statisticians, whose members have entered their particular field of science after special training by a systematic course of instruction. We have our statisticians, to be sure, but they have taken up their work accidentally, and not as a profession. Men engaged in the practice of law or of medicine, or in the other learned professions, enter them only after careful preparation. Our government trains its soldiers and sailors; our colleges and higher institutions of learning fit men for various special scientific and professional labors, but we have not yet reached the advanced stage of educational work in this country which comprehends administration in its broadest terms. The European has an advantage over those engaged in statistical work in this country. Many of the leading colleges and universities of the continent make special effort to fit men to adopt statistical science as a branch of administration, or as a profession.

Körösi, Neumann-Spallart, Ernst Engel, Block, Böhmert, Mayr, Levasseur, Bodio, and their score or more of peers, may well excite our envy, but more deeply stimulate the regret that one of their number,

from his brilliant training and his scientific attainments, cannot present to you to-day the necessity of copying into the curricula of our American colleges the statistical features of the foreign school. For magnificent achievement the American statistician need not blush in the presence of the trained European, for, without conceit, we can place the name of our own Walker along with the names of those eminent men I have enumerated. With all the training of the schools, the European statistician lacks the grand opportunities which are open to the American. Rarely has the former been able to project and carry out a census involving points beyond the simple enumeration of the people, embracing a few inquiries relating to social conditions; such inquiries seldom extending beyond those necessary to learn the ages, places of birth, and occupations of the population. Such a census, compared with the ninth and tenth Federal enumerations of the United States, appears but child's play.

Dr. Engel once said to me that he would gladly exchange the training of the Prussian Bureau of Statistics for the opportunity to accomplish what could be done in our country. For with it all, he could not carry out what might be done with comparative ease under our government. The European statistician is constantly cramped by his government; the American government is constantly forced by the people. The Parliament of Great Britain will not consent to an industrial census, the proposition that the features of United States census-taking be incorporated in the British census being defeated as regularly as offered. Nor does any continental power yet dare to make extensive inquiries into the condition of the people, or

relative to the progress of their industries. The continental school of statisticians, therefore, is obliged to urge its government to accomplish results familiar to our people. The statistics of births, deaths, and marriages, and other purely conventional statistics, are substantially all that come to the hands of the official statisticians abroad. In this country, the popular demand for statistical information is usually far in advance of the governments, either State or Federal, and so our American statisticians have been blessed with opportunities which have given them an experience, wider in its scope, and of a far more reaching character than has attended the efforts of the continental school. Notwithstanding these opportunities which surround official statistics in this country, the need of special scientific training for men in the administration of statistical work is great indeed. This necessity I hope to show before I close.

It is not essential, in addressing an audience of this character, to spend a moment even upon definitions. The importance of statistics must be granted: the uses of the science admitted. But it may be well, before urging specifically the needs of this country for statistical training, to give a few facts relative to such work in European schools.¹

The best school for statistical science in Europe is connected with the Prussian statistical bureau, and was established a quarter of a century ago by Dr. Ernst Engel, the late head of the bureau, probably

¹President Walker, of the Institute of Technology; Dr. Ely, of Johns Hopkins; Prof. R. M. Smith, of Columbia College; Dr. Dewey, of the Institute of Technology; and Dr. E. R. L. Gould, of Washington, have very kindly placed at my disposal information supplemental to that which was at hand.

the ablest living statistician in the old world. The seminary of this statistical bureau is a training school for university graduates of the highest ability, in the art of administration, and in the conduct of statistical and other economic inquiries that are of interest and importance to the government. The practical work is done in connection with the government offices, among which advanced students are distributed with specific tasks. Systematic instruction is given by lectures, and by the seminary or laboratory method, under a general director. Government officers and university professors are engaged to give regular courses to these advanced students. It is considered one of the greatest student honors in Berlin for a university graduate to be admitted to the Statistical Seminary. One graduate of the Johns Hopkins University, a doctor of philosophy, is already under a course of instruction in the Prussian laboratory of political science.

The work of taking the Census of the Prussian population and resources is entrusted to educated men, many of them trained to scientific accuracy by long discipline in the Statistical Seminary, and by practical experience. (Circulars of Information, U. S. Bureau of Education. No. 1, 1887, by Prof. H. B. Adams.)

In this seminary there are practical exercises under the statistical bureau during the day time, with occasional excursions to public institutions, in addition to lectures held mostly in the evening. A recent programme of the seminary comprehends :

1. Theory, technique, and encyclopædia : once a week.
2. Statistics of population and of dwellings : once a week.
3. Medical statistics : once a week.

4. Applied mathematical statistics : once a week.
5. Agrarian statistics : once a week.
6. Exercises in political economy, finance, and financial statistics : 2 hours a week.

The students assist in the work of the statistical bureau without compensation. This is a part of their training, and by it theory and practice are most successfully combined.

I believe there are courses in statistics in nearly all the universities in Germany, certainly in the more prominent institutions of that country, but there are no distinct chairs of statistics. Statistical science is considered a part of political economy, and professors of the latter science give the instruction in statistics.

The most prominent announcements for the leading European universities, for the year 1886-7, are as follows :

University of Leipzig : Professor W. Roscher lectures on agricultural statistics, this branch being a part of one course, taking one or two hours a week. One hour a week is also given to political economy and statistical exercises by Dr. K. Walker.

University of Tübingen : Prof. Gustav von Rümelin devotes three hours a week to social statistics, while Professor Lorey includes in his lectures a treatment of the statistics of forests.

University of Würzburg : Professor G. Schanz devotes four hours a week to general statistics.

University of Dorpat (a German institution in Russia) : Professor Al. v. Oettingen teaches ethical statistics two hours each week.

University of Breslau : Professor W. Lexis uses one hour a week on the statistics of population.

University of Halle : Professor Conrad has a seminary of five hours a week, in which statistical subjects, among others, are carefully treated.

University of Kiel : Professor W. Seelig devotes four hours a week to general statistics, and statistics of Germany.

University of Königsberg : Professor L. Elster lectures two hours a week on the theory of statistics.

University of Munich : Dr. Neuberg has a course of one to two hours a week on statistics.

University of Strasburg : Professor G. F. Knapp teaches the theory and practice of statistics three hours a week, and with Professor Brentano has a seminary two hours a week, in which, among other matters, they treat statistical subjects.

University of Prague : Professor Surnegg-Marburg teaches the statistics of European States three hours each week.

University of Vienna : Professor von Inama-Sternegg devotes two hours each week in a statistical seminary.

In addition to the university work outlined, much work is done in the technical schools, as, for instance, at the technical school in Vienna there are given regularly two courses of statistics :

First, "General comparative statistics of European States;" their surface, population, industries, commerce, education, etc.

Second, "Industrial statistics of European States;" methods and "technik" of industrial statistics.

These courses are given by Dr. von Brachelli, who is officially connected with the Government Bureau of Statistics.

At Dresden, Dr. Böhmert lectures at the Polytechnic on "The elements of statistics," and has a statistical seminary. Böhmert is the director of the statistical bureau in the department of the interior. Part of the instruction is given at the bureau. Courses are also given at Zurich on the elements of statistics.

Some of the more important announcements connected with the Ecole Libre des Sciences Politiques, of Paris, for the year 1886-7, are as follows :

1. By Professor Levasseur, the theory of statistics, and the movement of population, one hour a week for the first quarter.
2. By M. de Foville, Chief of the Bureau of Statistics, one hour a week in the second quarter upon statistics, commerce, and statistics of foreign commerce.
3. By Professor Pigeonneau, one exercise each week, in which he treats, among other subjects, of commercial statistics.

In the programme of the University of Brussels, for 1878 and 1879, an announcement for a course of political economy and statistics twice each week, by Professor A. Orts, was made.

Something is being done in Italy, but how much I am not at present able to learn.

These courses, it will be seen, are devised for special training in the practical statistics of the countries named.

A great deal of effort has been expended in Europe through statistical congresses since 1853 to secure uniform inquiries in census-taking, and it is to be regretted that the Congresses have not accomplished the results sought. It was unfortunate that the attention of the statisticians of the world, as brought together in the congresses, was given to the form of inquiry to the exclusion of the form of presentation. In tracing the discussions and deliberations of these congresses, the absence of the intelligent treatment of the presentation of facts, even when drawn out by uniform inquiries, becomes apparent. The art of the statistician in his administrative work found but little encouragement in the long discussions on forms of inquiry, and less was accomplished by these congresses, which are not now held, than has been accomplished through training in the universities of Europe. The great statistical societies abroad have done much in stimulating statistical science, and out of these societies there has now been organized the International Statistical Institute, the first session of which was held in Rome during last month; much is to be hoped from the labors of this Institute, for the men who compose it bring both training and experience to the great task of unifying statistical inquiries

and presentations, so far as leading generic facts are concerned, for the great countries comprehended under the broad term, "the civilized world." For this great array of work, the outlines of which I have briefly and imperfectly given as carried on in Europe, America has no parallel.

Our colleges are beginning to feel that they have some duty to perform, in the work of fitting men for the field of administration, and specifically in statistical science. Dr. Ely is doing something at Johns Hopkins, giving some time, in one of his courses on political economy, to the subject of statistics, explaining its theory, tracing the history of the art or science, and describing the literature of the subject. He attempts, in brief, to point out the vast importance of statistics to the student of social science and to put his student in such a position that he can practically continue his study. Johns Hopkins, as soon as circumstances will admit, will probably secure teachers of statistics and administration, in addition to its present corps of instructors.

Dr. Davis R. Dewey, of the Massachusetts Institute of Technology, is also devoting some time, in connection with his other work, to statistical science. He has two courses:

First, A course of statistics and graphic methods of illustrating statistics, in which attention is chiefly given to the uses of official statistics of the United States. Students are directed to the limitations there are in this respect, what compilations have been and are made, and to the possible reconciliation of discrepancies which appear in official reports. This course is taken in connection with a course in United States finance, and the student is trained to

find and use the statistics which will illustrate the points taken up, and to present them graphically.

Second, An advanced course is given in statistics of sociology, in which social, moral, and physiological statistics are considered, in short, all those facts of life which admit of mathematical determination to express the "average man." Some of Dr. Dewey's actual problems may serve to illustrate the practical work of his course. Samples of the problems which he gives to his students are as follows :

Are the Indians increasing or decreasing in numbers ?

Criticise by illustrations the statement that the value of the products of manufacture of the United States in 1880 was \$5,369,325,442.

What margin of error would you allow, if called upon to test the accuracy of the returns of population under one year of age in the Federal census returns ?

Can you devise a method to determine from the census reports on population, Table XXI., which is the healthier state, Massachusetts or Connecticut ?

Is it true that Massachusetts has more crime per capita than Alabama or Georgia ? Can you offer any explanation or facts modifying such a statistical conclusion ? Do the census reports afford information as to the increase or decrease in crime ?

Perhaps the most systematic teaching of the science of statistics in America is given at Columbia College, under the direction of Professor Richmond M. Smith. He has lectured on the subject of statistical science in the Columbia College School of Political Science since the year 1882. His course is an advanced one for the students of the second or third year of that school. In the first year of the work there were but three students of statistical science ; at present there are about twenty-five. Professor Smith gives them lectures two hours per week through the greater part of the year. The theoretical lectures cover a brief history of statistics ; a consideration of statistical

methods ; of the connection of statistical science with political and social science ; of the attempt to establish social laws from statistical induction ; the doctrine of probabilities, etc., this part of the course being based on German and French writers, principally Mayr, Engel, Wagner, Knapp, Oettingen, Quetelet, Block, and others. The practical part of the Columbia course covers the ordinary topics of statistical investigation, and the statistics are taken, as far as possible, from official publications. These latter lectures are of course comments on the tables and diagrams themselves. Wall tables are used to a certain extent, but experience has found it more convenient to lithograph the tables and diagrams, giving a copy to each student, which he can place in his notebook, and thus save the labor of copying.

From a circular of information from the Columbia College School of Political Science I find the following, relating to the teaching of statistical science :

" Statistical science : methods and results. This course is intended to furnish a basis for a social science by supplementing the historical, legal, and economic knowledge already gained, by such a knowledge of social phenomena as can be gained only by statistical observation. Under the head of statistics of population are considered : race and ethnological distinctions, nationality, density, city and country, sex, age, occupation, religion, education, births, deaths, marriages, mortality tables, emigration, etc. Under economic statistics : land, production of food, raw material, labor, wages, capital, means of transportation, shipping, prices, etc. Under the head of moral statistics are considered : statistics of suicide, vice, crime of all kinds, causes of crime, condition of criminals, repression of crime, penalties and effect of penalties, etc. Finally is considered the method of statistical observations, the value of the results obtained, the doctrine of free will, and the possibility of discovering social laws."

There may be other instances of the teaching of statistical science in American colleges, but those given are all that have come to my knowledge. At

Harvard, Dr. Bushnell Hart is teaching the art of graphically presenting statistics, while at Yale and other institutions the theory and importance of statistics are incidentally impressed upon the students in political economy. It will be seen, therefore, that if there is any necessity for such a course as has been cited, the necessity is being met only in slight degree.

Is there such a necessity? Speaking from experience I answer emphatically, Yes. There has not been a single day in the fourteen years that I have devoted to practical statistics that I have not felt the need, not only in myself, but in the offices where my work has been carried on, of statistical training; training not only in the sense of school training, but in the sense of that training which has come to our American statisticians only through experience. My great regret on this occasion is that I can address you with the statistical bureau only as my *alma mater*, but perhaps the lack I have seen and felt of a different *alma mater* may give force to my suggestions.

The problems which the statistician must solve, if they are solved at all, are pressing upon the world. Many chapters of political economy must be rewritten, for the study of political economy is now brought under the historical and comparative method, and statistical science constitutes the greatest auxiliary of such a method. There is so much that is false that creeps into the popular mind, which can be rectified only through the most trustworthy statistical knowledge, that the removal of apprehension alone by it creates a necessity sufficient to command the attention of college authorities. The great questions of the day, the labor question, temperance, tariff reform, all great topics, demand the auxiliary aid of

scientific statistics, and a thorough training is essential for their proper use. But in the first place there should be a clear understanding of what is necessary to be taught. We read many chapters on the theory and practice of statistics. What is the theory of statistics? The use of the word *theory*, in connection with statistical science, is to my mind unfortunate, for the word theory, when used in connection with positive information, antagonizes the public mind. When you speak of the theory of statistics, the word theory meaning speculation, the popular feeling is that theoretical statistics are not wanted, but facts. Theory may be fact; statistics may substantiate theory or controvert it. All this we know, and yet I feel that the word is used unfortunately in this connection. If I understand it correctly, the theory of statistics is simply a statement of what it is desired to accomplish by statistics.

Every branch of social science serves to explain the facts of human life. There are some facts which can be explained only by statistics. For instance, it is asserted that there is an alarming amount of illiteracy in Massachusetts. Statistical inquiry shows that by far the greater number of these illiterates are of foreign birth, so that the fault is not with the public school system, but the evil is due to a temporary cause, namely, immigration.

Again, it has been freely asserted that in the United States women of native birth do not have as many children as women of foreign birth. The Census of Massachusetts will show that although American women do have a less number of children, on the average, yet a larger number survive. Common observation would never have shown these things, or would not have shown them accurately.

So everywhere statistics attempt to explain the facts of human life, which can be explained in no other way, as for instance, the effect of scarcity of food on births, on marriages, or crime ; the effect of marriage laws on the frequency of divorce, etc. The theory of statistics points out where the statistical method is applicable, and what it can and cannot accomplish. In my opinion, however, it would be better to avoid the use of the word theory entirely, and adopt a concrete term like statistical science, which has three branches : collection, presentation, and analysis. Statistics is a science in its nature, and practical in its working.

The science of statistics, practically considered, comprehends the gathering of original data in the most complete and accurate manner ; the tabulation of the information gathered by the most approved methods, and the presentation of the results in compact and easily understood tables, with the necessary text explanations. It is the application of statistics which gives them their chief popular value, and this application may, therefore, legitimately be called a part of the science of statistics. The theoretical statistician is satisfied if his truth is the result of statistical investigation, or if his theory is sustained. The practical statistician is satisfied only when the absolute truth is shown, or, if this is impossible, when the nearest approximation to it is reached. But the belief that theory must be sustained by the statistics collected, or else the statistics be condemned, is an idea which gets into the popular mind when the expression, theory of statistics, is used. I would, therefore, avoid it, and I hope that should our colleges adopt courses in statistical science, they will agree

upon a nomenclature which shall be expressive, easily understood, and comprehensive in its nature.

The necessity of the study of statistical science would not be so thoroughly apparent if the science was confined to the simple enumeration and presentation of things, or primitive facts, like the number of the people; to tables showing crops, exports, imports, immigration, quantities, values, valuation, and such elementary statements, involving only the skill of the arithmetician to present and deal with them. The moment the combinations essential for comparison are made, there is needed something beyond the arithmetician, for with the production of averages, percentages, and ratios, for securing correct results, there must come in play mathematical genius, and a genius in the exercise of which there should be discernible no influence from preconceived ideas. The science of statistics has been handled too often without statistical science, and without the skill of the mathematician. Many illustrations of this point involving the statistics of this country could be given.

In collating statistics relating to the cost of production, the best mathematical skill is essential, even the skill which would employ algebraic formulæ. So with relation to statistics of capital invested in production. To illustrate, the question may be asked, what elements of capital are involved in the census question of "capital invested?" Is it simply the cash capital invested by the concern under consideration, or is it all the money which is used to produce a given quantity of goods? If the members of a firm contribute the sum of \$10,000, and they have a line of discounts of \$100,000, the avails of which are used in producing \$200,000 worth of completed goods, what

is the capital invested? What is the capital invested which should be returned in the census? If a man has \$5,000 invested in his business as a manufacturer, and he buys his goods on 90 days, or four months, and sells for cash, or 30 days, what is his capital invested? This question is one among many of the practical problems that arise in a statistical bureau, but which has not yet been treated scientifically. What has been the result of the reported statistics relating to capital invested? Simply that calculations, deductions, and arguments based on such statistics have been, and are, vicious, and will be until all the elements involved in the term are scientifically classified. Another illustration in point arises in connection with the presentation of divorce statistics, especially when it is desired to compare such statistics with marriages, or to make comparisons to show the progress, or the movement of divorces. Shall the number of divorces be compared with the number of marriages celebrated in the year in which the divorces are granted, or with the population, or with the number of married couples living at the time? I need not multiply illustrations. The lies of statistics are unscientific lies.

The conditions of this country necessitate knowledge as to the parent nativity of the population, features not included in any foreign census, and need not be. Such features lead to what may be called correlated statistics; for instance, where there are presented three or more facts relating to each person in the population, the facts being coördinate in their nature. In this class of work skill beyond that which belongs to the simple operations in arithmetic becomes necessary. There must be employed

some knowledge of statistical science beyond elementary statistical tables, or the correlations will be faulty, all the conclusions drawn from them false, and harm done to the public. While the scientific statistician does not care to reach conclusions from insufficient data, he much less desires to be misled by the unscientific use of correct data, or from data the presentation of which has been burdened with disturbing causes. The analytical work of statistical science demands the mathematical man. While this is true, it is also true that the man who casts a schedule (for instance, to comprehend the various economic facts associated with production), should have the ability to analyze the tabulated results of the answers to the inquiries borne upon the schedule. In other words, the man who casts the schedule should not only be able to foresee the work of the enumerator, or the gatherer of the answers desired, but he should foresee the actual form in which the completed facts should be presented. Furthermore, he should foresee the analysis which such facts stimulate and not only foresee the detail, but foresee in a comprehensive way the whole superstructure which grows from the foundation laid in the schedule. He should comprehend his completed report before he gathers the needed information.

How can these elements in one's statistical education be secured? The difficulties in the way of the best statistical work are not slight. Dr. Dewey, in a recent address upon average prices, before the American Statistical Association, gave an exceedingly valuable, and a very clear explanation of the difficulties which underlie all efforts to secure average prices ranging over a period of years; he pointed out the

different methods of securing such averages, and I can do no better than to use Dr. Dewey's own words, as taken from the address referred to. He says :

"There is first the ordinary 'index method' introduced by Mr. Newmarch, and continued by the Economist and Mr. Jevons. In this there is no attempt to take account of the varying importance of the commodities where prices are averaged together, but equal consideration is given to all.

"A second method is to give each commodity, where price enters into the averages, a weight proportionate to the quantity of it *sold* during a fixed period of time.

"In the third method account is taken of the varying importance of the commodities by regarding the part each plays in the *exports and imports* of a country. This system has been used by Messrs. Giffen and Mulhall. Mr. Giffen's process in detail is to find the average value of the different articles in the exports and imports; combine these in the proportions of the different articles to the totals of the exports and imports, and then reduce the totals for a series of years to the values they would have been equivalent to had prices remained unchanged."

This simply indicates that no statistician has yet arrived at a method for securing average prices that shall be considered absolutely correct; that is, in other words, the science of average prices has not been reached, because, if it had been, there would be but one method of securing them. There is but one multiplication table; all men agree to it, because every part of it has been demonstrated to be true. The principle of the multiplication table in statistical operations indicates that science triumphs, for no scientific conclusion is reached so long as skilled men, men of experience and of training, differ relative to methods or results.

The teaching of statistical science in our colleges involves three grand divisions :

1. The basis of statistical science, or, as it has been generally termed in college work, the theory of statistics.

2. The practice of statistics, which involves the preparation of inquiries, the collection and examination of the information sought, and the tabulation and presentation of results.
3. The analytical treatment of the results secured.

These three general elements become more important as the science of statistics becomes more developed; that is, while in conventional statistics, or official statistics if you prefer, meaning those which result from continuous entry of the facts connected with routine transactions, like custom house operations, the registration of births, deaths, and marriages, etc., these three elements may not be apparent. But when considered as regards the collection of information from original sources by special investigation through the census, through our bureaus of statistics of labor and kindred offices, and through the consular service, these three grand elements assume a vast importance, and statistical science demands that men be employed who comprehend thoroughly and clearly all the features of the three elements of the science, for the variety of facts to be collected suggests the variety of features connected with the work.

Last year I had the honor to address the American Social Science Association upon popular instruction in social science, advocating the teaching in the public schools of the elementary principles of social science, comprehending those things which are most essential in the conduct of life, in the preservation of health, and in the securing of good order. The Association discussed the practicability of teaching social science in our higher institutions of learning. The suggestion that the school and the college be utilized for propagating the science was met with but one

objection of any moment. This objection was that in the colleges and schools the whole time is now exhausted in teaching the branches of human knowledge already established as a part of the curricula of such schools; an excellent objection from a narrow point of view, but a thoroughly inadmissible objection from a point of view which takes in the development of the human race on the best basis, and on a high standard. It was met by the counter-statement that if there is no time in the ordinary college to teach all that the college now teaches, and devote a few hours per week to social science, and all that social science means, so far as teaching is concerned, then drop something else and introduce the social science. But nothing need be dropped in order to teach social science in the colleges and schools of the country. Now, the only objection which I anticipate to the teaching of statistics in our colleges is the same that was made to the proposition to teach social science generally in such institutions, that there is no room for the introduction of instruction in the new science. To my own mind this objection is not only trivial, but of no account whatever in the practical working of institutions of learning. Every well appointed college has its chair of political economy, and this department can be broadened sufficiently to take in statistical science, without impairing efficiency in this or any other department. If this cannot be done, then I would say to the colleges of America that the institutions which soonest grasp the progressive educational work of the day will be the most successful competitors in the race. That college which comprehends that it is essential to fit men for the best administrative duties, not only in government, but

in the great business enterprises which demand leaders of as high quality as those essential for a chief magistrate, will receive the patronage, the commendation, and the gratitude of the public. The college or the university which comprehends the demand of the day and institutes new forms of degrees to be conferred upon the men and women specially qualified in special science is in the van. Why should there not be a degree for sanitary science? Why should there not be a degree for social science? Doctor of Philosophy is not enough; it means nothing in popular estimation. The Doctor of Philosophy must understand various things; must be taught and thoroughly trained in the branches necessary to secure the degree of Doctor of Philosophy, but he may know nothing of other branches of human knowledge, except in the most incidental way, which are so essential to fit him for the best administrative duties. The organization of industry demands the very highest type of mind. I sometimes think that the great industrial chieftains of the world are far superior in their capacity, and in their general comprehensive ability, to the great statesmen, to the great leaders of politics, and the great lights that carry nations through crises even. The men who are the best trained, who have learned the practical work of special sciences, are the ones that are guiding the people, and so the colleges or the universities which grasp these things, introducing the teaching of statistical science along with all the other great features of social science, including the branches which bring knowledge nearest to the community itself, are the colleges which will secure success; and not only success in a pecuniary point of view, but success in that grander field of the best

work for the race. I urge, therefore, that our American colleges follow the example of European institutions. I would urge upon the government of the United States, and upon the government of the States, the necessity of providing by law for the admission of students that have taken scientific courses in statistics as honorary attachés of, or clerks to be employed in the practical work of, statistical offices. This is easily done without expenditure by the government, but with the very best economic results.

We take a census in the United States every ten years, but as a rule the men that are brought into the work know nothing of statistics: they should be trained in the very elementary work of census-taking and of statistical science. How much more economical for the government to keep its experienced statisticians busily employed in the interim of census-taking, even if they do no more than study forms, methods, and analyses, connected with the presentation of the facts of the preceding census. Money would be saved, results would be more thoroughly appreciated, and problems would be solved.

Our State and Federal governments should be vitally interested in the elevation of statistical work to scientific proportions; for the necessary outcome of the application of civil service principles to the conduct of all governmental affairs lies in this, that as the affairs of the people become more and more the subjects of legislative regulation or control, the necessity for the most accurate information relating to such affairs and for the scientific use of such information increases.

The extension of civil service principles must become greater and greater, and the varied demands

which will be created by their growth logically become more exacting, so that the possibilities within the application of such principles are therefore not ideal, but practical in their nature. And these potentialities in the near future will enhance the value of the services of trained statisticians.

The consular and diplomatic service, as well as other fields of government administration, come under this same necessity. The utilization of the consular service for original investigations creates in itself a wide reaching statistical force, and one which should be competent to exercise its statistical functions with all the accuracy that belongs to science. So government should supplement college training with practical administrative instruction, acquired through positive service in its own departments.

This appeal that statistical science be taught in our colleges comes to the Economic Association more forcibly than to any other. The beginning which has been made in this direction in this country is honorable indeed. Shall it be supplemented in the great universities and leading colleges of America? Do not think for a moment that if the teaching of statistical science be incorporated in our college courses the country will be flooded with a body of statisticians. There is enough work for every man who understands statistical science. He need not be employed by government. The most brilliant achievements of the European statisticians have been secured in a private or semi-official way. The demand will equal the supply, and the demand of the public for statistical knowledge grows more and more positive, and the supply should equal the demand.

General Walker in a letter in 1874 said: "The country is hungry for information: everything of a statistical character, or even of a statistical appearance, is taken up with an eagerness that is almost pathetic; the community have not yet learned to be half skeptical and critical enough in respect to such statements." He can add, Statistics are now taken up with an eagerness that is serious.

"Know thyself" applies to nations as well as to men; and that nation which neglects to study its own conditions, or fears to study its own conditions in the most searching and critical manner, must fall into retrogression. If there is an evil, let the statistician search it out; by searching it out and carefully analyzing statistics, he may be able to solve the problem. If there is a condition that is wrong, let the statistician bring his figures to bear upon it, only be sure that the statistician employed cares more for the truth than he does for sustaining any preconceived idea of what the solution should be. A statistician should not be an advocate, for he cannot work scientifically if he is working to an end. He must be ready to accept the results of his study, whether they suit his doctrine or not. The colleges in this connection have an important duty to perform, for they can aid in ridding the public of the statistical mechanic, the man who builds tables to order to prove a desired result. These men have lowered the standard of statistical science by the empirical use of its forces.

The statistician writes history. He writes it in the most concrete form in which history can be written, for he shows on tablets all that makes up the Commonwealth; the population with its varied

composition; the manifold activities which move it to advancement; the industries, the wealth, the means for learning and culture, the evils that exist, the prosperity that attends, and all the vast proportions of the comely structure we call State. Statistical science does not use the perishable methods which convey to posterity as much of the vanity of the people, as of the reality which makes the Commonwealth of to day, but the picture is set in cold, enduring, Arabic characters, which will survive through the centuries, unchanged and unchangeable by time, by accident, or by decay. It uses symbols which have unlocked to us the growth of the periods which make up our past—they are the fitting and never changing symbols by which to tell the story of our present state, that when the age we live in becomes the past of successive generations of men, the story and the picture shall be found to exist in all the just proportions in which it was set, with no glowing sentences to charm the actual, and install in its place the ideal; with no fading colors to deceive and lead to imaginative reproduction, but symbols set in dies as unvarying and as truthful in the future as in the past. The statistician chooses a quiet and may be an unlovely setting, but he knows it will endure through all time.

The Sociological Character of Political Economy.

BY FRANKLIN H. GIDDINGS.

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The aim of this paper is to set forth, briefly, a conception of Political Economy as a science of organic phenomena.

This conception is not opposed to that view which discloses the logical character of economic science, nor to that view which discloses its historical character. If valid, it should combine those two views into a scientific unity.

Neither does this conception remove the old landmarks by which the domain of Political Economy has been so long, and, on the whole, so satisfactorily defined. It does not attempt to make economic science co-extensive with the science of society, much less with the science of man. The phenomena of wealth are its subject matter. So far as it brings within the economist's consideration facts and principles that have been neglected or purposely excluded hitherto, it is because there seems to be reason for thinking that their exclusion limits or vitiates our knowledge of the production and distribution of wealth. These facts and principles belong all to one class. They are all involved in the reactions of wealth-production and distribution upon human nature and social organization. But according to

the conception here set forth, these reactions are not to be studied by the economist for their own intrinsic interest, as they are studied by the psychologist and sociologist, nor as subjects for approval or condemnation, as by the moralist, but because, having once taken place, they become; from that moment, antecedents of the further production and distribution of wealth.

Modern sociology differs from the older philosophy of history in the specific meaning it attaches to the proposition that the social aggregate is organic. When the biologist affirms that such or such an aggregate of units is an organism he not only means that it is composed of mutually dependent parts that are mutually helpful, he means specifically and chiefly that the habitual activities of every part mould and differentiate its structure, and that structure, in its turn, gives direction to activity. The boy who has worked daily from early childhood in needle-making becomes at sixteen a marvel of nervous and muscular coördinations adjusted to that particular work. But at thirty he can learn no new dexterity. His physical and mental structure have lost plasticity and all his activities have become well-nigh automatic. In every organism, then, the essential fact to be noted is the reciprocal determination of structure and function. Activity modifies structure and structure gives direction to activity.

In the social organism one part of this process is seen in the evolution of institutions through the habitual activities of the people. Institutions are, in fact, nothing more nor less than certain forms of concerted conduct become habitual and authoritatively sanctioned. And every kind of social activity

evolves its corresponding institutions. There is an economic structure in society as there is a political, as there is an ecclesiastical structure. Consisting of the whole body of arrangements, customs and laws, by which men of different abilities combine their industrial efforts and distribute the product, it is by no means inconspicuous, though one great school of economists has very nearly ignored it. The other part of the organic process is the reaction of social activities upon human nature. They shape the physical, mental and moral constitutions of individual men. The habitual activities become physiologically organized in brain cells and nerve fibers. The aptitude and taste for them are hereditarily transmitted. So, in time, traditional ideas and sentiments become the controlling agent in all further social activity. In this fact lies the conservation of institutions, the stability of social order. Modes, directions and relative amounts of social action, and with them customs and institutions, can be modified, henceforth, only in the slow measure that the inherited thought and feeling of the people are changed. Now if society is in truth an organism answering to this description, that scheme of Political Economy which finds the sufficient ground of economic phenomena in a human nature conceived of as undergoing no modification that the economist is bound to note, is unscientific. Professor Cairnes in a well-known passage, says that the economist "starts with a knowledge of ultimate causes. He is already, at the outset of his enterprise, in the position which the physicist only attains after ages of laborious search." "In the conclusions and proximate phenomena of other branches of knowledge" he has ready at hand premises for the discov-

ery of which "no elaborate process of induction is needed." This passage, unless very broadly interpreted, is a pre-Darwinian utterance. So long as economists accept it in a narrowly literal sense their science will remain in a pre-Darwinian stage of development. We must read into it the evolutionary thought. We must accept the conclusions of other branches of knowledge as they stand to-day, not as they stood fifty years ago ; and among these conclusions the most important for the economist is the doctrine that human nature and social institutions are not fixed products, but are still undergoing incessant modifications produced by those modes of daily activity which varying circumstances involve. If this doctrine is true, then, from the very nature of the facts, the problem before the economist is a double one. It includes the two questions : What and how does the social organism produce and distribute for its sustenance and growth ; and, How does the character of the thing produced and the manner in which it is produced and distributed react on the organism ? These two parts of the inquiry must be pursued together if we hope to discover true answers to either. If we neglect to investigate the reactions of economic activities, as those do who regard human nature as fixed, we are ignoring some of the chief conditions that are to determine the production and distribution of wealth in the next stage of the process.

The answer to be expected to this is that, in scientific procedure, we have a process called abstraction, whereby we eliminate all the troublesome radical quantities from our problems and enable ourselves to have an easy time with the

simple equations. Now abstraction is a very good thing provided we know what it is and know how to use it; but the notion of abstraction that has crept into Political Economy has no counterpart in any other concrete science. It is only a relative abstraction that has any value in concrete science. Psychology affords us the most serviceable example. In all cognition there is some feeling; in all emotion there is some thought. The two elements are never absolutely separated. But in formulating a theory of cognition we make relative abstraction of feeling. In what does this consist? Simply in subordinating in the consciousness of the student, that element which is subordinate in fact in the objective phenomenon studied. The thought process, from which feeling has almost departed, engages almost the entire attention of the investigator; but the feeling, that never absolutely disappears, is never absolutely forgotten. This relative abstraction is the only kind that has any proper place in Political Economy. When production and distribution, as determined by existing human nature and social organization, are relatively predominant in economic phenomena, as they were in England after the repeal of the corn laws, they will naturally occupy a relatively large place in the economist's scientific scheme. On the other hand, if the reactions of the modes of production and distribution for some time in vogue, have begun to disturb the social order, we are sure to see a partial neglect of the older economic questions and a concentration of attention upon the physiological, moral and political aspects of the industrial *regime*. There could be no more striking proof of the essential truth of the view here pre-

sented of the dual nature of the economic problem and the relativity of economic abstraction, than the phenomena of the world-wide labor movement, now in progress. This great upheaval has compelled economists, whether they would or not, to seek its causes in the action of economic forces upon the natures of men, and, in so doing, to admit that these forces are not entirely expended in the immediate creation of wealth, and to perceive that among its effects will be considerable modifications of social structure and function, which, in their turn, will affect all subsequent production and distribution.

Political Economy, then, as the science of wealth, is necessarily the science of the reciprocal relations of wealth and the social organism. Among English writers, the one who approached nearest to this conception was Malthus, who said that Political Economy was the science of man in his relations to wealth.

This conception necessitates several important changes in the traditional plan of our science.

If one compares a systematic work on physiology with a systematic work on Political Economy, his attention will be arrested by the great amount of descriptive matter in proportion to the logical matter in the one work, and the great amount of logical matter in proportion to descriptive, in the other. If political economy is a science of organic phenomena, we must devote far more time and space to description than any systematic English writer has done since Adam Smith. But this description must be something more than a mere narrative of facts and events, or such collections of unorganized materials as fill the bulky volumes of Professor Roscher. It

must be a description of economic phenomena in their relations to each other and to underlying principles, in a word, in their coördinations. I think we may say that this work has been most promisingly begun, and that our own association stands for most valuable contributions to it, already accomplished and to be accomplished in the future.

But we must guard against the mistake made by a few extremists of the historical school of undervaluing logical analysis. It is not quite creditable to the scientific sense of Political Economists that a dispute has arisen over the logical method of the science. In no other science, not even in psychology or ethics, is there any such dispute. In physics or chemistry or physiology it would be regarded by investigators of established reputation as evidence that the disputants were not quite within the scientific pale. The consensus of scientific opinion on this point has been well established since the publication of Mr. Mill's "Logic" and has been reduced to an exceedingly clear and simple statement by Professor Jevons. "However useful may be empirical knowledge," he says, "it is yet of slight importance compared with the well connected and perfectly explained body of knowledge which constitutes an advanced and deductive science. . . . The history of science would show conclusively that deduction was the clue to all the greatest discoveries. . . . The complete method consists in the alternate use of induction and deduction. . . . Though observation and induction must ever be the ground of all certain knowledge of nature, their unaided employment could never have led to the results of modern science."

Accepting the organic conception as our starting point, and admitting that the matter of our science

must be descriptive for the most part, but that the descriptive matter must be logically interpreted, the next question to consider is the proper order of investigation and the resulting subdivision of the science. We may make some havoc, now, with the traditional division into Production, Exchange, Distribution and Consumption.

We have to remember, first, that in an organic aggregate the unequal effects of different parts and functions upon each other is due in great measure to the unequal rigidity of the parts and the unequal constancy of their action. On this account the physiologist begins his exposition by describing those parts that are least plastic and those characteristics of organs and functions that are relatively constant. He makes the provisional assumption that they are constant. From this beginning he goes on to give an account of the characteristics that are relatively inconstant, being easily affected by changes of surroundings, habit and nutrition. Next, he shows how changes in activity and nutrition slowly modify organs and functions, and he is then ready to go back and correct the provisional assumption with which he started out, and show that the constancy presumed is only a relative constancy, and that the whole organism is undergoing a gradual evolution. Finally, he reconstructs the process of historical evolution through which the organism came to be what it is.

May we not find advantage in following a similar course in economic investigation?

Beginning the search for the relatively rigid and constant factors in economic phenomena, we shall find them to be (1) The economic institutions of com-

mon and statute law. These are the most inflexible, the least easily modified things the economist has to consider; all other factors have to shape themselves to these. (2) The economic customs of the people, that is, the arrangements and habits whereby they associate or compete in carrying on production; the ways in which they combine their efforts. (3) Those economic ideas and traits in the natures of men that have become hereditary. These, of course, are the usual ideas of the community, and the physical and moral traits of the great majority of men.

The plastic and modifying factors in the economic organism will be found in the ideas and traits that differ from the average type, and in the changing general conditions resulting from these, especially those results of plastic ideas that are embodied in inventions.

Neither in the usual nor in the occasional economic nature, shall we discover the famous economic man. The conceptions of wealth and value brought to light will be but vaguely like those set forth in economic definitions. For it is the popular conceptions of wealth in the concrete, not any notion of wealth in the abstract, that are the real antecedent actual economic phenomena. What does a society crave? That it sets itself to produce. That determines what shall be wealth, and the proportions in which it demands the different sorts of wealth not only create the phenomena of value, but they determine the accumulation of capital, the organization of industry, the industrial vitality of labor, and, in fine, the reproductive, self-enlarging, self-perpetuating power of the economic life.

Is any concrete illustration needed of this truth? Look, then, at the mediæval and the modern concep-

tions of wealth and their consequences. For the mediæval mind the supreme embodiment of wealth was the cathedral, a structure not for the individual but for man; a structure in which centered the pride and devotion of high born and low alike, and into the building of which nothing but perfect materials and perfect workmanship might enter. By this ideal trade was controlled and labor organized. Cheapness was not a good. Fidelity, painstaking, the patient achievement of perfection were the industrial virtues, and by them the artisan was lifted up into a truly noble life. His guilds were associations for something more than organized resistance, and men and masters mingled in fraternal fellowship. To-day, the characteristic sign of the popular notion of wealth is cheapness. We demand abundance rather than quality. If commodities are cheap we do not always inquire, as Mr. Ruskin would have us, whether the money we save is the outcome of action that has created, or action that has annihilated, ten times as much. Business is debased. The moral sentiment pervading any trade is forced down, as Professor Adams has shown, "to the level of that which characterizes the worst man who can maintain himself in it." The mediæval conception of wealth found the workman a serf and raised him to freedom. The modern conception of wealth found him a freeman; it has forced upon him the conviction that he must now protect his freedom by measures of defensive war.

Different communities and the same community at different times, will exhibit a great variety of economic human nature in all but fundamental characteristics. Through the comparative study of this

variety we shall reach the scientific reconciliation between those economists who hold that Political Economy should formulate an economic ideal with those who hold that it should concern itself only with the actual. Economic science can formulate no higher ideal than one derived from the most advanced ideas and practices found in actual life. If the economist, pursuing the study of the actual, faithfully describes the economic natures and practices of the most advanced men, he does, in so doing, forecast the economic ideal. And if the economic thought and action of the best communities or associations of men are described in contrast with the economy of communities or associations that are less perfect, whatever of moral obligation it may be the function of economic science to disclose, will stand out and speak out for itself. There will be no need of dogmatism or exhortation.

The comparative study of economic institutions and customs as we find them, and of the economic natures of men as we find them, constitutes the first part or division of the science. The second part has to do with the activities arising from economic desires and taking channels determined in part by economic institutions and customs. These activities constitute the actual phenomena of production and distribution. They are continually multiplying and assuming a bewildering variety of new forms, yet they are also undergoing a process of integration which brings them into orderly arrangement. In this part of the science, as in the former one, we may advantageously conform the order of exposition to the generality and constancy of the phenomena. So doing we shall first note two principal

ways in which the economic natures of men act themselves out in production and distribution. One way is through individual efforts, consciously or unconsciously combined. This is the constant and universal way, found wherever human beings exist, in whatever stage of culture. It is the way without which society could not exist at all. The other way is through the self-consciousness of the community, expressing itself in law and public opinion. This mode of action is found in all of the more highly evolved societies, but it is lacking in those that are less developed. It is a secondary mode in all and not absolutely essential in any. A community can always exist after a manner, without it. Do not understand me to mean that the individual is precedent to society, and that society is constituted by the aggregation of individuals, as used to be taught. All the latest researches of biology and ethnology go to show that the exact contrary is true; that society is precedent to the individual. But the primordial society is not a self-conscious society. The ties that bind its units together are physical forces and the ties of relationship, superstition and tradition. In society, as in the individual, true self-consciousness is of late birth. It is also, as compared with the great fundamental processes that are built up by the unconscious combination of individual efforts, very easily modifiable. There is perhaps no other organic product that is quite so sensitive to every influence and quite so plastic in form, as true public opinion.

Accordingly, the student should turn his attention to production and distribution, as determined by individual efforts, before undertaking to trace the economic action of the social self-consciousness.

Following still the method chosen, he will distinguish between two kinds of production. One is the primary, indispensable production of simple utility. The other is the secondary, immensely important, but not indispensable production of that complex utility called value.

Nearly every economist since Ricardo has been careful to assure us that wealth comprises only those useful articles that have value. But as a matter of fact, value is a comparatively late phenomenon in the evolution of wealth, and the conception of value is by no means a primary one in the evolution of economic science. The pioneers who clear farms in the wilderness and store their cellars with food, and wear clothing spun and woven in their own kitchens, may have no experience of the facts of value in the economic sense, but for all that, they are producers of wealth. Primitive communities periodically dividing their lands, or cultivating them in common, and dividing the produce, show us nothing that, in the strict economic sense, can be called value, but are they therefore destitute of wealth? Concrete embodiments of utility are what the unlettered man understands by wealth. The production of these is the primary economic process, and I think that no one who has carefully studied the profound work of Professor Jevons will hesitate to admit that "the best employment of labor and capital by a single person"—the entire phenomena of exchange and value being left out of consideration—is a question that must yet be treated in economic science.

Furthermore, I wish to maintain that value itself is a *mode of utility*. It is with diffidence that I vent-

ure to criticise Professor Jevons, but I am obliged to think that he just fails of carrying out his thought to its legitimate conclusion. Defining value as ratio of exchange he says that it *depends on* utility. Now value is not a ratio, though its mathematical expression is a ratio, and it does not depend on utility for it is utility, evolved in a certain specific way, and quantitatively limited. The whole difficulty attaching to this subject seems to have arisen from substituting the quantitative expression for the thing expressed. If we should speak of weight as a quantity or measure of gravitation, and then make abstraction of the gravitation, we should have left a mathematical formula only, and that formula would not be a definition of weight. So it is with value. Weight is not the ratio by which the measurement of gravitation is expressed, it is gravitation measured. Value is not the ratio by which the measurement of utility is expressed, it is utility measured. It is when a comparison of utilities begins, and one utility is measured in terms of another, that value in its most general form arises. This process of comparison cannot go far save in one specific way, which has its origin in the fact that utility is relative, arising, as Professor Jevons says, "from commodities being brought in suitable quantities and at the proper times into the possession of persons needing them." To a large extent this is done by an immediate process, in the production, by labor, of concrete goods to be consumed by the laborer. But to a considerable and always increasing extent this process fails. The laborer finds that, in spite of his best endeavors, he produces more of some things than he can use and less of others than he wants. His surplus would

be useful if put into the possession of persons needing it, and this potential utility is therefore made actual by exchange. It is this potential utility that is habitually compared, measured, valued, as a part of the process of exchange. Consequently, value, in the economic sense, *is the potential utility that is measured and made actual by exchange.*

It follows that exchange is a secondary process of production. It is complex production in distinction from simple production, and value is complex in distinction from simple utility. The creation by labor of immediate, actual utility, plus more or less of potential utility, is the primary process. The creation of value presupposes the creation of unexchanged utility. A community may exist without the secondary process, it can not exist without the primary. The primary is constant and universal, the secondary merely common; and that definition of Political Economy which calls it the science of exchanges, is absurd.

Perhaps another result of the method here proposed will be a more distinct recognition than we have had of the incidental character of the process of distribution. As Professor Clark has so clearly shown in his "Philosophy of Wealth," there is no separate process of distribution. There is no part of the social organism having distribution for its specific function. Distribution is simply an incidental consequence of production. The less developed a society is, the more largely is distribution determined by the primary process of production. What the fisherman or the peasant farmer produces of actual utility, he has. The more perfectly developed a society is the more largely is distribution deter-

mined by the secondary process of production; that is, by exchange. Goods are now produced to sell. The condition of the market, commercial advantage or disadvantage, relative skill in buying and selling, determine the shares of wealth that men obtain.

We shall never fully understand either distribution, exchange or simple production, considered as results of individual economic effort, until we get firm hold of the truth that these are not three separate processes but only three developments of one process, in which distribution cannot be separated from exchange and simple production, nor exchange from that production of utility by labor which it presupposes. The traditional partition of economic science into departments of production, exchange, distribution, etc., not only does not correspond to the objective fact, it misrepresents the objective fact.

Individual economic efforts are coördinated chiefly through an unconscious physical process by the tendency of all activities, considered as physical forces, to reach an equilibrium. The highest and most difficult achievement in this part of economic science is to determine the laws of equilibrium of the complex system of forces in action. Among the difficult problems that have not yet received their final solution are those of demand and supply, cost of production, the relation of competition to combination, the relation of commodities to money and of money to prices, and the rhythms of credit and industrial prosperity. All these are problems of economic physics, and will be solved, when they are solved, by the application of the mathematical method of Gossen, Jevons and Walras. The common mistake of the mathematical economists is in assuming that there is nothing in Political Economy but economic physics.

In affirming, a moment ago, that distribution, exchange and simple production are but developments of a single process, I was careful to say, "considered as results of individual economic effort." The necessity of this qualification becomes apparent when we turn our attention to the economic function of the social consciousness. We then discover at once that this function consists, in large measure, in deliberately separating production, exchange and distribution, into distinct processes. It distributes wealth to some extent by actually taking it from the hands in which production and exchange would leave it, and giving it to others. It decides when, how and to what extent exchange shall be permitted. It prohibits the production of certain things and the production of anything under certain conditions.

The study of this economic action of the social organism through its self-consciousness corresponds very nearly to the study of what Adam Smith meant by "systems of Political Economy," that is, the systems of economic policy which nations consciously adopt and put in force by legislation. It comprehends all that modern writers have included under the designation of applied political economy, conscious that it is something that the economist cannot neglect, but debarred by the old conceptions from treating it as an integral part of the science. If there is but one social organism which acts in the two broadly contrasted ways that have been described, we can have no complete theory of production and distribution by neglecting one-half of the process, and the study of the economic action of the social organism through its self-consciousness is just

as legitimately an integral part of our science as the study of its action through individual efforts.

The third grand division of Political Economy will deal with the reactions of production and distribution upon the social organism. I shall not undertake, at this time, to follow out the subdivision of this part. Let me merely say that it will include, besides the study of the consumption of wealth, an investigation of the reactions of the ways of getting and dividing wealth, and of the gradual change, under these reactions, of the economic natures of men and the economic institutions and customs which had been provisionally assumed to be fixed. I know of nothing more dreary and unimportant than the customary text-book chapter on the consumption of wealth. Nothing in economic science is of such immeasurable importance as the production, partition and consumption of wealth as related to the evolution of the social organism, and I believe that future students will find the study of this relation as much more fascinating than the study of other economic processes, as students of biology find the study of the reactions of activity upon the organism more fascinating than the mere dissection of parts.

Prepared by studies in this last field, economists may, I think, investigate with some success the past evolution of the economic organism. The historical economists are accumulating invaluable data for this work, but we are not yet able to use it to the best advantage. We lack as yet what the biologist calls the evolutionary sense. And this sense is to be acquired by the economist as by the biologist, chiefly by studying in the most common phenomena about us, the reciprocal reactions of the organism and its activities.

I believe that this scheme of Political Economy constitutes an organic whole. But because of its magnitude, and because its different parts require different mental qualities that are not always united in one student, it will resolve itself for working purposes into a number of special sciences. That part which I have called Economic Physics will include all of the *a priori* economy that culminated in the earlier writings of Mr. Mill. Professor Jevons was right, I think, in his belief that all of that economy will come within the range of the mathematical method. But besides Economic Physics there will be a Descriptive Political Economy, identical with what I have called the first division of the science; an Economic Politics, co-extensive with the second part of the second division, and an Economic Biology and Psychology, co-extensive with the third division. My purpose is accomplished if I have shown that these cannot be independent, or mere loosely related sciences, but that they are true organic parts of a perfectly organic whole.

Some Considerations on the Legal-Tender Decisions.

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Paper read at the joint session of the American Economic and Historical
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No decisions of our Supreme Court possess a more enduring interest for the student of our Constitutional History and Law than those rendered in the so-called Legal-Tender Cases. They are memorable on account of a number of important and in some respects unique circumstances. The question at issue belongs to the most important questions which have ever come before that court for adjudication, being nothing less than the power of the Federal Legislative to fix the legal means of payment at its discretion. It involved the right of the Federal Government to abolish gold and silver coin as the only means of debt payment, and substitute therefore mere pieces of paper, bearing the promise of the government to pay at its pleasure. It is, of course, difficult to conceive of a more far-reaching power, or one which, if exercised in certain ways, could affect more intensively our industrial society.

Additional interest is lent to the cases by the fact that the Chief Justice of the Court, when the first case came before it, was the man, who as Secretary of the Treasury, was chiefly responsible for the very legisla-

tion, the constitutionality of which he was now called upon to determine; by the further fact that a decision rendered in one year was reversed by the court almost within a twelve month; and by the circumstance that a third decision was rendered within less than fifteen years, which, though not reversing, but rather confirming the decision of the court in the second case, yet repudiated, or at least ignored entirely the reasoning upon which the court had rested its opinion on that occasion.

An unpleasant sort of interest is moreover attached to it because of the deplorable fact that in connection with these decisions the charge of partisanship was openly made, and what is still more to be regretted, widely believed, even the Chief Justice himself not being able to conceal altogether his opinion that the decision in the second case was the result of conscious desire on the part of the executive to influence the action of the court in the direction of approving the course of the Legislative department. The opinions of the various members of the court give evidence of the excitement and bitterness of the discussion.¹

¹The following letter from Judge Hoar to the writer is of great interest. apropos of this charge:

WORCESTER, June 18, 1887.

MY DEAR SIR—The pressure of some important professional and other duties has brought my correspondence sadly behindhand. I have to ask your pardon for great delay in answering your letter.

No sillier calumny was ever uttered on the stump than that which imputes the selection of Judges Strong and Bradley to a desire to reverse the legal-tender decision. Their names were sent to the Senate before that decision was made. General Grant, Secretary Fish and Attorney-General Hoar have emphatically denied the charge. There never was the smallest particle of evidence in its favor that I ever heard. Certainly no reason need be sought for their selection other than the character and learning of the men. Judge Strong

These cases taken together illustrate some of the most important features of our constitutional and political life, and connected as they are at several points with decisions running back in an unbroken line for nearly a century, they offer us an excellent example of our methods of solving difficult constitutional questions, and admirably illustrate the principles of constitutional interpretation which underlie our whole system of law and politics.

They show forth in a clear light, for instance, the great influence which the executive and legislative may have on the attitude of the court toward constitutional questions, even though they may not exercise their undoubted privilege of affecting the make-up of the court by adding new men. If, for example, it had been possible to get the court to express its opinion of the constitutionality of such legislation, before it had been actually made, i. e., in advance of the pas-

has lately retired from active duty with universal respect—a model of the judicial character. I suppose the general voice of the profession and of his brethren of the bench would place Judge Bradley at the head of all living American jurists. It would have been difficult, if not impossible, to have found a republican fit for that high judicial position who was not of their way of thinking on the legal-tender question. The Supreme Court of every Northern State where the question was raised, and that was nearly all, had held the same way, as had the eminent Chancellor of Kentucky.

Judge Hoar, General Grant's Attorney-General at the time of the nomination of these two judges, on whose advice they were selected, stated some time since in a public letter, that he knew when the nomination was made that Judge Strong, in an opinion delivered when on the Supreme Bench of Pennsylvania, had upheld the legal-tender act; but that he knew nothing of Judge Bradley's views, except that as counsel for a railroad, he had advised them that they were bound in honor to pay previously contracted debts in gold.

I am, yours very respectfully,

GEO. F. HOAR.

sage of the legal-tender laws, it is possible that we have never had a court which would have held such legislation to be constitutional. Whereas, after the laws had been actually passed, and been in force for years, we found a court to decide that they were constitutional as war measures, and fourteen years later another one which declared them to be constitutional, no matter whether passed in times of war or peace.¹

The reason for this is obvious. If it had been possible to get the opinion of the court beforehand, the latter would have been bound to be sure that the proposed laws were constitutional before it could say so, i. e., it must have been positively sure beyond a reasonable doubt. In other words, it would then have occupied the position which every legislature should take. On the other hand, when the bill came up before them as an accomplished fact, it came with all the prestige that accompanies the act of another and co-ordinate branch of the government. The presumption is in all such cases in favor of its constitutionality. The courtesy due a separate and independent branch of the government requires great care and caution in treating such cases, or as Justice Chase puts it in that first decision, declaring the legal-tender laws unconstitutional, so far as applicable to debts contracted before their passage : "The court always approaches the consideration of questions of this nature reluct-

¹In some of the States notably, Maine, New Hampshire and Massachusetts, the Governor, council, or either House of the Legislature may call upon the Supreme Court to give their opinions upon important questions of law or upon solemn occasions. If this were allowed by the Constitution of the United States, it would be possible to get the opinion of the court beforehand, and it is probable that the course of our constitutional development would have been somewhat different.

antly, and its constant rule of decision has been, and is, that acts of Congress must be regarded as constitutional, unless clearly shown to be otherwise."

Justice Strong puts it still more emphatically in the second legal-tender case:

"A decent respect," he says, "for a coordinate branch of the government demands that the judiciary should presume, until the contrary is clearly shown, that there has been no transgress of powers by Congress, all the members of which act under the obligation of an oath of fidelity to the Constitution. Such has always been the rule. In the case of *Commonwealth vs. Smith* (Binney 4, 123), the language of the court was: 'It must be remembered, for weighty reasons, it has been assumed as a principle in construing constitutions, both by the Supreme Court of the United States, by this court, and by every other court of reputation in the United States, that an act of the Legislature is not to be declared void unless the violation of the Constitution is so manifest as to leave no room for a reasonable doubt.' It is incumbent therefore upon those who affirm the unconstitutionality of an act of Congress to show clearly that it is in violation of the provisions of the Constitution. It is not sufficient for them that they succeed in raising a doubt."¹

¹"A reasonable doubt," says Judge Cooley, "in summing up a discussion of this subject, must be solved in favor of the legislative action and the act be sustained." (Constitutional Limitations, p. 218). *If an act may be valid or not, according to circumstances, a court would be bound to presume that such circumstances existed as would render it valid.* (Talbot vs. Hudson, 16 Gray. 417.) This is of special interest in connection with the third legal-tender case in which it was decided that if Congress could pass a legal-tender law as an exigency law, the court would be bound to assume an exigency when such a law was passed.

Harris, J., New York Court of Appeals, 17, N. Y. 235, declared: A legislative act is not to be declared void upon a mere conflict of interpretation between the legislative and the judicial power. Before proceeding to annul by judicial sentence what has been enacted by the law-making power, it should clearly appear that the act cannot be supported *by any reasonable intendment or allowable presumption.*

It is reasonable to expect that where a construction has once been placed upon a constitutional provision it will be followed afterwards,

It is evident that so long as this continues to be the attitude of the court, and that will doubtless be as long as the court shall last, the legislative branch has a great vantage ground in deciding what shall be the interpretation put upon the various clauses of our constitution, since by adopting any given interpretation, as evidenced by the passage of a particular law, they thereby raise a presumption in favor of an interpretation which maintains the constitutionality of action already taken.

All this is, of course, entirely aside from the influence which the legislative branch may exercise by adding new members to the court whose opinions are known beforehand. The first legal-tender case was argued in the December term of 1867, and was then postponed for a fuller argument until the December term of 1868. During the pendency of the cases two vacancies occurred on the bench, one by resignation of an existing member, and one by a law of Congress providing for an additional justice.

even though its original adoption may have sprung from deference to legislative action rather than from settled convictions in the judicial mind. (Cooley, Const. Limit., p. 220; *People vs. Blodgett*, 13 Mich., 127).

So strong is this legal principle that the court (in the case of *Rogers vs. Goodwin*, 2 Mass., 475; *Cooley's Limitation*, p. 84), said of a certain construction: "Although if it were now *res integra* it might be very difficult to maintain such a construction, yet at this day the argument *ab inconvenienti* applies with great weight. We cannot shake a principle which has so long and steadily prevailed."

The Supreme Court of Massachusetts, 14 Allen, 389, held that the constitutionality of the act of Congress making treasury notes a legal tender, ought not to be treated by a State Court as an open question after the notes had practically constituted the currency of the country for five years. (Cf. *Cooley, Constitutional Limitations*, p. 218.)

The decision declaring the legal-tender laws unconstitutional was read February 7th, 1870, and was supported by a majority vote of two in a court of eight justices. The resignation of Justice Grier, together with the new position, left two places to be filled. To these Justices Strong and Bradley were appointed. Justice Strong had already in Pennsylvania rendered an elaborate opinion from the Supreme Bench of that State in favor of the constitutionality of this legislation, and it was claimed that the sentiments of Justice Bradley were also known to be in favor of this side of the case. However this may be, the whole thing shows how easily this conjuncture of affairs could have been used for just such a purpose, and it is noteworthy that one of the immediate results of the new appointments was a reconsideration of the matter in the case of *Knox vs. Lee*, and a reversal of the opinion of the court by a majority of one in a court of nine justices.

Another remarkable feature of these cases, or rather decisions, is the almost unanimous character of the last, and most sweeping one of all, as compared with the close votes of the court on the preceding cases. Five to three stood the first vote. Five to four the vote that reversed the first decision and rested the right of Congress to pass such laws on the war powers of the constitution; while the last, which decided that Congress had such power also in times of peace, was rendered by a vote of eight to one. This phenomenon can hardly be explained by the supposition that the court was slowly but steadily packed for this special purpose in the way indicated above as a possible one.

Equally noteworthy is the entirely different char-

acter of the reasoning in the last and the two former cases. The discussion in both the first cases turned on what was essentially an economic point. The Court in the case of *Hepburn vs. Griswold*, held that conferring the legal-tender character upon the notes of the government was not a necessary or appropriate means of carrying out any of the functions of the government, because as a matter of fact this circumstance did not improve the quality of the notes as currency. This view was supported by what was essentially an economic argument on the nature and functions of a government currency. In the decision *Knox vs. Lee*, the court joined direct issue on this very point, and maintained that the legal-tender character was necessary to make these notes serve the purpose for which they were issued, and that they were therefore a necessary and proper means of carrying into effect an acknowledged power of the Federal Government.

In the last case the court quietly passes over this whole argument and rests the decision upon what is much more a legal or constitutional ground. In both the former cases the court was evidently influenced, to a large extent, by what it supposed would be the economical evils of a contrary decision. In the last the court refused to ask itself the question whether the issue of legal-tender notes is or is not, economically speaking, a good or bad thing, and confined itself simply to the question whether Congress had the power or not.

This is, indeed, one of the interesting circumstances connected with this whole question, whether before the court, or in the press and on the rostrum before the general public. The court is besought by those

opposed to the policy of issuing such currency to save the country from the evil effects of legal-tender notes, by declaring that Congress has no power to issue them. This of course is no proper appeal to make to the court. It has to decide a question of law and not of policy ; and no matter how clear the court might be that such and such a policy might be injurious, it has no business to place its veto on it, provided the body establishing the legislation has the power as a matter of law so to do. It will be found, I think, that this element of expediency of the exercise of the power in a certain way has largely influenced many in their judgement as to the actual conferring of the power as a matter of law.

This is acknowledged in a recent pamphlet devoted to an examination of Mr. Bancroft's "*Onslaught on the Court*,"¹ by Mr. McMurtrie of the Philadelphia bar—a man who is reputed to be one of the most clear-headed constitutional lawyers in the country. In one passage in the pamphlet referred to, he says, that he had always supposed that the decision of the question hinged really on whether one would take the strictly legal or the statesman's view of the subject, which of course means whether one would regard it as a question of law, which it really is, or of politics, which it is not.

Let us now look squarely at the case as it appeared before the court, with a view of arriving at an opinion as to the merits of the case from a constitutional point of view. In presenting the arguments, I shall use the best statement of them which I have been able to find, whether in the opinion of the court, the argument of counsel or the brochures of publicists.

¹The Constitution wounded in the House of its Friends.

Congress had actually passed a law making its notes a legal-tender. This creates a presumption clear and distinct in favor of the constitutionality of the measure, according to the uniform decision of the courts of last resort in our country. I quoted above the opinion of the court as to the necessity of having a clear demonstration of the unconstitutionality of a measure, before it would upset the action of Congress. Chief Justice Chase himself, at the very session in which the Hepburn case was decided, held in *Veazie Bank vs. Fenno*, that the practice of the government was one of the elements in deciding a constitutional case.¹ In a word then, the burden of proof rests in a legal point of view, entirely upon those who attempt to establish the unconstitutionality of any given act of Congress.

In answer to this, it is held in the first place that the constitution, on its face, does not confer the power to issue legal-tender notes. If by this is meant that it does not confer that power in so many words, then it will of course be admitted. But it does not confer the power to carry on war, or to suspend the *habeas corpus* act, or to pass penal laws to sustain its legislation, or to establish a national bank, or to emit treasury notes, or to exercise the right of eminent

¹Great deference has also been paid in all cases to the action of the Executive Department, where its officers have been called upon under the responsibilities of their official oaths, to inaugurate a new system, and where it is to be presumed they have carefully and conscientiously weighed all considerations and endeavored to keep within the letter and spirit of the constitution. If the question involved is really one of doubt, the force of their judgment, especially in view of the injurious consequence that may result from disregarding it, is fairly entitled to turn the judicial mind.—(Cooley's Limit. p. 83.)

domain, or to sue or to make contracts, or to collect statistics other than the mere numbering of the persons, or to construct canals or railroads, or assist in their construction, or to establish for itself a priority of payment over debts due to other creditors, or to establish observatories, or to erect light houses, etc., etc.—all of which are now acknowledged to be part and parcel of the powers conferred by the constitution.

If, however, what is meant is that the power is not included in any power expressly granted, then this is a question for investigation and examination. Has Congress any power whatever over the legal tender of the country? It must be admitted that, judging by the uniform practice of the government and the decisions of the courts, it has the power to make gold and silver, or any other metal, a legal tender. Now whence does it derive this power? It is certainly not expressly granted, for it is quite distinct from the power to coin money and regulate the value thereof. It can only be inferred as an incidental power. It would seem, indeed, from an examination of all the clauses bearing on the subject, both those relating to the restrictions on the states and those conferring powers in regard to it on the national government, that whatever power there is to make a legal tender has been conferred on the Federal government. We shall return to this point later.¹

It is urged that it was the intention of the framers of the constitution to prohibit the Federal government from exercising any such power. If this were really so, it would have been a very simple matter to incor-

¹Cf. McMurtrie's argument.

porate their views in a clause like that referring to the states, forbidding them to make anything but gold and silver coin a legal-tender in the payment of debts. It may be replied to this that they thought they had, since they did not grant it in express terms, and the new government was to be a government of limited powers. This is not satisfactory, however, since the whole country gave, at the time of the adoption of the constitution, good evidence that they were afraid that a government had been constituted with they knew not what powers, as is amply shown by the first ten amendments.

However this may be, the whole argument from intention is met in the following way :

1. The intention has little to do with the question, the real point being not what they intended to do, but what they actually did do, as a matter of fact. No court of law allows intention to do a thing to be plead against a plain failure to do it. Even in the construction of wills, contracts, etc., the question is not what the person wanted to do, but what he did do. In other words intention is to be inferred from actually what is said. If any other principle were adopted there would be no way of settling questions of dispute where the parties to a contract, for example, have different ideas as to what the instrument means, since each one intended to do a different thing. Take a case, such as occasionally occurs in private law, and nearly always in public law, where the parties are trying to overreach each the other. Each hopes to get such provisions into the law or contract as will redound to his own benefit, or incorporate his own ideas. Now it is evident that no court could undertake to compare these various intentions, and see

which on the whole is the fairer or better, etc., and then put that into the law as the meaning.

2. Intention in the case of a public body, such as a legislature, as Mr. McMurtrie rightly argues in the pamphlets above mentioned, does not at all mean the same thing as intention when applied to morals, or that part of law founded on what we call the moral nature, i. e., consciousness of meaning or the exercise of will. The only reliable guide to intention is to look to the words and the circumstances under which they were used. People are held to mean what their words or acts infer. This is a perfectly well-accepted principle of law, and finds expression in many legal decisions which the court is bound to consider in deciding the case. No statute is construed by referring to the private gossip of the draughtsman, or even by statements made in debate. (Minnesota 10, 126.) As to any other instrument that is to be an authority or guide, and require construction, such as deeds, wills, contracts, etc., notoriously the most improper man on earth to expound a writing is the writer. He alone of all men can not distinguish clearly what is and what is not intended by what is written, and separate it from what floated in his mind but did not reach the paper. (3 Howard 24 Gibson, C. J.; Serg. & Rawle 12, 352; 7 Harris, 156; Black C. J. & Lewis 2 Casey 450.)¹

¹We know of no rule for construing the extent of such powers other than is given by the language of the instrument which confers them, taken in connection with the purposes for which they are conferred. (Gibbons vs. Ogden, 9 Wheaton, 1-240; Meyer's Digest, §1183; C. J. Marshall.)

Though a particular object may have been in the contemplation of the Legislature, a court is not bound to conclude that they have done what they intended, unless fit words be used for that purpose. (1 Paine, 35.)

3. We are, therefore, not entitled, on principles of law, to inquire into intention in this case in the sense in which that term is ordinarily used, owing to the evident impossibility of really ascertaining it. It is well known that there was a difference of opinion as to the wisdom of conferring this power, and language was finally adopted which seemed to satisfy both parties. It is evident that

The spirit of the act must be extracted from the words of the act, and not from conjectures. *Aliunde*, (*Gardner vs. Collier*, 2 Peters, 73).

The meaning of the Legislature is to be ascertained from the language of the statute. (*Platt vs. Union Pacific*, 9 Otto, 58.)

In expounding this law the judgment of the court cannot in any degree be influenced by the construction placed upon it by individual members of Congress, in the debate which took place on its passage; nor by the motives or reasons assigned by them for supporting or opposing amendments that were offered. The law as it passed is the will of the majority of both Houses, and the only mode in which that will is spoken is in the act itself; and we must gather their intention from the language there used, comparing it when any ambiguity exists with the laws upon the same subject, and looking if necessary to the public history of the times in which it was passed. (*Aldridge et. al. vs. Williams*, 3 Howard, 24).

The object of construction is to give effect to the intent of the people in adopting it. But this intent is to be found in the instrument itself. (*Cooley's Limitations*, p. 68.)

To adopt the principle of looking beyond the instrument to ascertain its meaning, when it may be fairly inferred from the instrument itself, the constitution may be made to mean one thing by one man and something else by another, until in the end it is in danger of being rendered a mere dead letter. (*People vs. Pardy*, 2 Hill, 35).

It follows from these principles that the statute itself furnishes the best means of its own exposition, and if the sense in which the words were intended to be used can be clearly ascertained from all its parts and provisions, the intention thus indicated shall prevail without resorting to other means of aiding in the construction. And these familiar rules of construction apply with at least as much force to the construction of written constitutions as to statutes; the former being presumed to be framed with much greater care and consideration than the latter. (*Green vs. Weller*, 32 Miss., 650-678).

there is no ground here to found intention in any sense of that term which would correspond to its use in ordinary life. Moreover, we must remember that the men who drew this instrument were not the parties who enacted it into law. And certainly the latter are entitled to as much consideration in this matter as the men who drew the writing. This would lead us into an examination of the ideas and intentions of each man who voted for the ratification of the instrument. This is evidently absurd as a principle of law. The case is exactly analogous to one which we find every day in our ordinary legislatures, where one party wishes to adopt a certain policy and the other is opposed, and they finally agree on a law because each side thinks that it favors its own views. No court could go into an investigation of exactly what each member thought he was voting for, when he cast his vote on one side or the other. And it has repeatedly happened in the course of judicial decision in this country that the courts have held that a given law meant a very different thing from that which it seemed to most of the legislators who approved of it. Naturally enough, for the only question which the court has before it is not what the legislators thought they were doing, but what they actually did do in the case.¹

¹More than that the legislature is not even allowed by the courts to construe their own statutes after any action has occurred under them :

Statutes declaratory of the proper construction of a law are unconstitutional and void as far as they affect private transactions. (14 Otto, 677). This it will be seen is of such a sweeping character that even if the unanimous vote of the Constitutional Convention had been cast in favor of a given interpretation, the court would not only

However, suppose we waive this point, which actually bars out all reference to the intention of the framers, let us look a moment at the evidence of intention which is before us. The court in the last decision says: "The reports which have come down to us of the debates in the convention that framed the constitution afford no proof of any general concurrence of opinion upon the subject before us." This remark becomes the object of some pretty severe criticism on the part of Mr. Bancroft and others. And yet it seems plain that the court is justified in this view by the actual record of the convention.

The only debate which throws any light on this question was held on August 16th, 1787. It occurred on the proposition to cut out the words—"and emit bills of credit"—which formed part of the draft submitted to Congress. Morris was in favor of cutting it out with the idea that if the clause were dropped

not be bound by it, but would be bound to declare that the opinion was valueless in point of law.

The meaning of a statute is to be ascertained from the language used and not by inquiring of the individual members of the legislature what they intended by enacting the law. If the natural import of the law is different from the effect intended to be given to it by those who were for it, the only safe rule is to take the act as it stands as conveying the intention of the legislature. (9 Otto, 58).

What passes in Congress upon the discussion of a bill can not become a matter of strict judicial inquiry in construing the statute, and little reliance ought to be placed upon such sources of information. (2 Story, 648).

As worded in another case:

It is not even allowable for a legislature, even by a formal vote, to construe a law which it has itself passed—except under such forms as may be taken to have established a new law; for the vote of a legislature, that a statute passed by it means such and such a thing, has been frequently disregarded by the courts as being the exercise of a judicial power by a legislative body, and must always be determined

Congress would have no power to issue treasury notes. Butler seconded the motion. Madison thought they had better simply insert a prohibition to make them a legal-tender, evidently showing that he thought, if the power to emit bills were conferred in that simple way, that the government would have authority to make them legal tender. Morris, that striking out these words would still leave room for a responsible minister to emit treasury notes. Gorham thought that leaving out the clause would be better without inserting any prohibition, thinking that the words as they stood would suggest and lead to the emission. Mason thought Congress would not have power unless expressed (thus differing from Morris), and expressed himself as unwilling to tie up the hands of the government by such a prohibition. Gorham thought that the power so far as safe would be involved in the borrowing power. Mercer was opposed to a prohibition for two reasons: 1st, he was in favor of paper money on general principles. 2nd,

as of no effect at all so far as regards acts performed before such declaration. (See 39 Penn., 137; Cooley's Limitations, p. 113.)

The clearest manner, therefore, in which legislative intent can be ascertained, i. e., by a formal vote on the very question of meaning, has no binding force whatever on the courts.

As Smith writes it:

When we once know the reason which alone determined the will of the law-makers, we ought to interpret and apply the words used in a manner suitable and consonant to that reason, and as will be best calculated to effectuate that intent. Great caution should always be observed in the application of this rule to particular given cases; that is, we ought always to be certain that we do know and have actually ascertained the true and only reason which induced the act. It is never allowable to indulge in vague and uncertain conjecture, or in supposed reasons and views of the framers of an act, where there are none known with any degree of certainty. (Smith on Stat. and Const. Const. 634).

it would not do to excite opposition of friends of paper money by a prohibition, evidently thinking if nothing were said about it, that every man would be entitled to his own opinion on the subject. Ellsworth thought it was now a good time to shut and bar paper money out, but he did not indicate whether this would, in his view, be accomplished by simply saying nothing about it. Randolph was opposed to depriving the government of the power altogether. Wilson thought it would be good to preclude paper money, but did not indicate how he thought it could be accomplished, whether by prohibition or by simply saying nothing about it. Butler was also in favor of taking away the power, but did not indicate how it had better be put. Read and Langdon were also opposed to giving this power to Federal Government, but did not indicate how their ideas should be incorporated.

The clause was then cut out by a vote of nine States to two. Madison adds a footnote that he decided the vote of Virginia by voting for cutting it out because he had become convinced that the government would have the power of issuing government notes as far as they could be safe and proper, and would only cut off the pretext for a paper currency. He does not give us the course of argument by which he arrived at this. Nor does he give us any clue as to whether the other members of the convention agreed with him. In a word, it is a purely private opinion of Mr. Madison which events have proved to be wrong. This is not the first time that an individual, in drawing a public document, thinking that he had included and excluded certain things, found out afterwards, when the instrument came up for adjudication, that he had made a mistake.

It is evident that nothing definite can be inferred from this record as to the intention of the convention.¹

About all that we can assert is that several members were in favor of refusing this power to the Federal government, that some were in favor of conferring it, that those who spoke on the topic were in doubt as to the effect of simply dropping the clause, and that as a matter of fact the clause was dropped. We have absolutely no means of knowing whether the majority of the delegates or states were opposed to granting this power, whether they thought that cutting out this clause would leave the question an open one, or, with Madison, that it

¹Cooley states the law as to the proper use of the proceedings of the convention, thus:

"When the inquiry is directed to ascertaining the mischief designed to be remedied or the purpose sought to be accomplished by a particular provision, it may be proper to examine the proceedings of the convention which framed the instrument; where the proceedings clearly point out the purpose of the provision this aid will be valuable and satisfactory; but where the question is one of abstract meaning it will be difficult to derive from this source much reliable assistance in interpretation. Every member of such a convention acts upon such motives and reasons as influence him personally, and the motions and debates do not necessarily indicate the purpose of the majority of the convention in adopting a particular clause. It is possible for a clause to appear so clear and unambiguous to the members as to require no discussion, and the few remarks concerning it may be positively misleading. It is also possible for a part of the members to take the clause in one sense and a part in another. And even if we were certain we had attained to the meaning of the convention, it is by no means to be allowed a controlling force, especially if this meaning appears not to be the one which the words would most naturally and obviously convey. For as a constitution does not derive its force from the convention which framed, but from the people who ratified it, the intent to be arrived at is that of the people." (Cooley Limitations, p. 80.)

would give us all the benefits and none of the evils of a paper currency, or whether they thought that the government would still have the power under other grants, and that they could safely afford to let the matter rest or whether they thought anything at all about the matter. One thing, however, is significant, and that is that several members thought that if the clause to emit bills on the credit of the United States were left standing, it would carry with it, in the absence of a special prohibition, as a matter of course, the power to make them legal-tender, and others thought that the power to emit bills would be inferred under the borrowing power. As a matter of fact, the power of the government to emit bills of credit is as well acknowledged as any other power of the Federal legislative, or, as Chief Justice Chase decided in *Veazie Bank vs. Fenno*, it is settled by the uniform practice of the government, and by repeated decisions, that Congress may constitutionally authorize the emission of bills of credit, and, that too, though the record distinctly shows that a clause conferring this power was struck out of the constitution as first presented after some debate.

There is, I suppose, little doubt that many of the most eminent men of the revolution thought that the power of making treasury notes a legal tender should not be granted to the Federal government. But their ideas before they went into the convention, have nothing, of course, to do with what was actually achieved. As the result of discussion a compromise was accepted, and like many another compromise the meaning of the instrument can not be ascertained by consulting those who are interested in a certain interpretation by securing the general

acceptance of which they would have gained their case.

As to what the early men thought the constitution, as actually adopted, really did say on this topic, we also have no satisfactory evidence ; but such as there is of it is rather in favor of the view that legal-tender power was conferred on Congress by the constitution. When we look in the *Federalist*, for example, to find out what was said on this point, we find curiously enough nothing whatever upon the subject. It must be a matter of surprise to every one, that if the case were so clearly made out as it claimed to be by those who hold this view, there should be no mention of the subject in this important series of papers. If the leading men of all parties were so clear in their ideas as to the importance of refusing this power of making a legal-tender, and were so confident that it really had been done, and it had really occupied such an important position in the public mind, it is remarkable that there should be absolutely no express reference to the matter.

It is also astonishing, if the view of those who think the power of making anything but gold and silver coin a legal-tender was denied the Federal government were correct, that there are so very few traces of any reference to the fact in the current discussions of the time in the conventions or in the press, especially if the general interest in the subject were so active as they would have us believe. There are almost no notices at all, even of the fact that paper emissions were forbidden to the states. Luther Martin's letter only proves that he was doubly mistaken, since he speaks of the erasure of the clause "to emit bills" as the denial of such power to Congress, when events have proven that he was mistaken.

Of contemporary opinions as to this point, the one of Hamilton, expressed in 1790, December 13th, as Secretary of the Treasury, in a letter to the House of Representatives, is important. He says: "The emitting of paper money by authority of the government is wisely prohibited to the individual states by the national constitution; and the spirit of that prohibition ought not to be disregarded by the Government of the United States." Here in the very act of opposing the exercise of the power, he conceded its existence. He virtually admits the authority of Congress to do what he thinks they ought not to do as a matter of policy.¹

The appeal is also made to the opinion of commentators and jurist and statesmen from the beginning of the Government down to the present.

Marshall is first appealed to. The court in the last decision shows however pretty plainly that Marshall's opinions contain nothing adverse to the power of Congress to issue legal-tender notes. Even in the case of the Articles of Confederation, which said explicitly that all powers not expressly delegated to the United States were retained by the states, Marshall was not willing to say that they did not confer the right to make the notes a legal-tender. He spoke very guardedly, saying simply that Congress did not, as a matter of fact, make the notes a legal-tender; "perhaps," he adds, "they could not do so," and as if giving a ground for this opinion, he remarks further, that this power resided in the states. But even this

¹"Contemporary construction can never abrogate the text; it can never fritter away its obvious sense; it can never narrow down its true limitations; it can never enlarge its natural boundaries." (Story in Const. § 407)

reason, which was seemingly the only one which occurred to the judge for his opinion does not of course exist under our present constitution, by which this power is expressly prohibited to the states.

Webster's opinion is also quoted and made very much of. It is exceedingly interesting to study Webster's opinion on this topic, for it serves to show several important points in regard to the subject. The opinion commonly quoted is an expression used by him in a debate with Benton, in which Benton twitted him with being willing to abolish the money of the constitution, etc. It was not at all necessary for him in that connection to join issue with Benton on the general question, and like a skillful debater, he granted whatever was not necessary to his argument. We have, however, luckily, a formal opinion prepared by him on this very topic shortly afterward, by which he declared he was willing to stand or fall, as expressing his most matured convictions on this important topic.

He laid down four propositions, as follows :

1. The coinage power includes the power to maintain along with the coin a paper currency.
2. Congress has power to emit bills of credit.
3. The power to regulate commerce carries with it the power to provide a paper currency for the whole country.
4. The power of Congress to emit bills of credit is derived from the prohibition on the states. These were all sub-propositions in support of a main proposition that it was the duty of Congress to provide such a currency for the country. The logical inference from these propositions, in regard to the power of Congress over the legal-tender, were first drawn in

the case of *Jiullard vs. Greenman*, in the year 1884.

Story is also quoted. From his commentaries doubtless, for as a judge on the bench in the same year as Webster announced his mature convictions, viz. : 1837, in the case of *Briscoe vs. the Bank*, (11 Peters, 348) he supported Webster's views, at least so far as related to the power of Congress over a paper as well as a coin currency.

Thirty-three years later, in the celebrated case of *Veazie Bank vs. Fenno*, the court held the soundness of Webster's views, and practically approved his first three propositions.

Fourteen years later the court again finds the question before it in a more advanced state, viz. : Can Congress impart a legal-tender character to the currency which it is thus enabled to provide? And almost unanimously the court decides that such currency, being as before decided a constitutional currency, Congress might give to it any legal character which properly belongs to currency as such, it not being prohibited by the constitution.

So much for what may be called the negative argument. It seems to me plain that the case of those who maintain that Congress has exceeded its power, in making paper money legal-tender, is not and can not be made out. In other words that, to use the expression of the court, they have not "succeeded in demonstrating clearly and beyond question that such power is forbidden by the constitution or not conferred." It can scarcely be said, even at the most, that they do more than raise a doubt in regard to the matter, and this as we have seen, is not sufficient. There are various corroborative arguments which I must pass over.

On the other hand there is a positive argument in favor of the view that the constitution confers this power on Congress, which should not be overlooked. It is evident from a consideration of the constitution as a whole, that the constitution does confer all the power in regard to the currency which is conferred on any element in our system. If sovereignty in regard to the currency is not conferred on Congress, then it has certainly not been conferred at all. Now, if we follow out the precedents already given us by the early interpreters of the constitution, and confirmed by the decisions of many a later one in construing the constitution, we shall have no difficulty, I think, in showing pretty clearly that this power was actually conferred, and that Congress was actually right in so considering it.

In the first place, in order to ascertain the meaning of constitutional phrases, we are compelled to examine the history of cotemporaries, and particularly that of the English nation. The constitution is filled with phrases which are absolutely unintelligible except as they are explained by the course of history. In construing such an instrument as the constitution, we may expect to find, says Mr. McMurtrie, terms which had been used as embodying royal or imperial prerogatives. In conferring or limiting powers in the constitution, no words were used which were unfamiliar to English ears. Almost every term was a word of art, the meaning of which could be ascertained only by reference to what it meant in the development of English political and private law. Consider the terms law and equity, bills of attainder, *habeas corpus*, freedom of the press and of speech and many others. The only way to ascertain the meaning of these terms

is to go to English law; outside of that they have no meaning at all. Take, moreover, such grants as that making the President commander-in-chief of the army and navy. How is it possible to find out how much was granted under this phrase, except by having regard to what it meant in English law and in the customs and habits of civilized Europe. Our ancestors were a hard-headed practical race, which used these terms in well defined meanings, or at least regarded as a matter of course, that the meaning was to be ascertained in a regularly defined method.¹

Now it is a conclusion borne out by all the decisions of our courts, that the meaning of such grants as were given, the meaning of terms used in them, etc., was to be found by references to the custom and habits of other civilized nations. If sovereignty over any matter is committed to the national government, then the content of that form of sovereignty is to be determined by reference to what it contained in other civilized nations, and especially in England. Even Mr. Field, who dissented from the last decision of the court in the legal-tender case, on the ground that there could be no incidental powers of sovereignty in the case of a limited government, at the same term of court held, in the case of *U. S. vs. Jones*, 109 U. S.

¹As Cooley puts it:

It must not be forgotten, in construing our constitutions, that in many particulars they are not the legitimate successes of the great charters of English liberty, whose provisions declaratory of the rights of the subject have acquired a well understood meaning, which the people must be supposed to have had in view in adopting them. We cannot understand these provisions unless we understand their history, and when we find them expressed in technical words and words of art, we must suppose these words to be employed in their technical sense.

513, that the right of eminent domain was an incident of sovereignty. In a word, it seems that the position of the court in the last case is absolutely unassailable on principles of law or politics, that when a particular sovereign power is granted, the only mode of ascertaining how it may be exercised, i. e., what the grant meant to convey, is to inquire what was the usage among the civilized nations in respect of that power. And the right to the same usage then vests in the United States government, restrained only by restrictions imposed by that instrument itself.

The only question then which we have before us is, what the right "to coin money" meant at that time. This, fortunately, we can ascertain easily from the literature and practice on the subject to be found in England and on the continent at that time. It is pretty well proven that the right to coin money or right of coinage was a general phrase in common use at the time, and for a long time before the Revolution, to designate sovereign power in regard to the currency. It was used as an ordinary means of indicating that certain princes had the complete sovereignty in regard to the circulating medium; and that this included, as a matter of law and fact, the right to declare anything the government pleased to be a legal tender, is evident from the financial history of every European country.

To put it in a nut shell then, the right to coin money meant sovereign power over the currency, (as it was used at the time) and this power was conferred on the general government, and it carried with it in the absence of restrictions the same sweeping power which other sovereignties had at the time.

It is held by some that "money," under the consti-

tution, means only coined money, i. e., gold and silver coins. Now Justice Field says in his dissenting opinion in the last legal-tender case, that it is a settled rule of interpretation that "the same term occurring in different parts of the same instrument shall be taken in the same sense, unless there be something in the context indicating that a different meaning be intended." Now if this be true it overthrows his case, since it is evident that "money," in the clause "no money shall be drawn from the treasury except in consequence of appropriations to be made by law," includes treasury notes, greenbacks, national bank notes, etc., etc., in which case, on Field's theory, "money," in the phrase *to coin money*, would also include all these varieties of notes.

This is not the argument which the court in its last decision advances in support of its views, though it refers to it as entitled to consideration. The power to make a paper currency was subsumed by the court under the power to borrow money. Under the power to borrow money on the credit of the United States, and to issue circulating notes for the money borrowed, its power to define the quality and force of these notes as currency is as broad as the like power over a metallic currency under the power to coin money and regulate the value thereof.

The actual decision of the court deserves to be quoted in full: The Congress, as the legislature of a sovereign nation, being expressly empowered by the constitution to lay and collect taxes to pay the debt and provide for the common defence and general welfare of the United States, and to borrow money on the credit of the United States, and to coin money and regulate the value thereof, and of foreign coin, and

being clearly authorized as incidental to the exercise of those great powers to emit bills of credit, to charter national banks, and to provide a national currency for the whole people, in the form of coin, treasury notes and national bank bills, (all of which let it be noticed is admitted now to be constitutional doctrine), and the power to make the notes of the government a legal tender in payment of private debts being one of the powers belonging to sovereignty in other civilized nations, and not expressly withheld from Congress by the constitution, we are irresistibly impelled to the conclusion that the impressing upon the treasury notes of the United States the quality of being a legal tender in payment of private debts, is an appropriate means conducive and plainly adapted to the execution of the undoubted powers of Congress consistent with the letter and spirit of the constitution, and therefore within the meaning of that instrument necessary and proper for carrying into effect the powers vested by this constitution in the government of the United States. Such being our conclusion in matter of law, the question of expediency is not for us to decide, they add in effect.

It is not perfectly clear from this passage exactly on what ground they place their decision, but that can be ascertained from other portions of the opinion. It is evident, however, from a reading of the opinion of the court, that the interpretation which Mr. Bancroft and Mr. Justice Field himself put upon the words of the court are not justifiable, when they would make the court appear to say that the Government of the United States has all the sovereign powers which other governments enjoy, and which are not expressly prohibited to it. Since the court

explicitly says that it is a government of limited powers, only that when the constitution gives to it sovereign powers in any matter, as for instance, borrowing money, and does not accompany it with restrictions as to the method of exercising it, it has all the rights of other similar governments at the time of the adoption of the constitution. And this is the doctrine of every court since the days of Marshall on every similar question which has come before it.

I cannot resist the conviction that the result of this long discussion in the Supreme Court foreshadows the ultimate decision of more and more of our constitutional students until it will be as generally accepted to be sound constitutional law, as is the decision of the court that the government has the power "to emit bills" under the constitution. A progress from a minority in 1869 to a majority of one in 1870, for the constitutionality, and to an almost unanimous opinion (eight votes being in favor and only one against) fourteen years later, properly forecasts, I believe, public opinion outside since, as a matter of law, it is bound to prevail in the long run.

The arguments against this cumulative proof that the constitution vests this power in the Federal government, all prove too much, and if pursued to their logical conclusions, they would result in over-turning some of the most widely acknowledged views of the Supreme Court.

As to its effects on the political development of the country, I think personally that it will be good. It is desirable that somewhere in the body politic should be placed the full and complete power over the legal-tender. On this topic the words of Alexander Ham-

ilton on a similar subject commend themselves to me. In No. 34 of the *Federalist* he says :

"In pursuing this inquiry we must bear in mind that we are not to confine our view to the present period, but to look forward to remote futurity. Constitutions of civil governments are not to be framed on a calculation of existing exigencies; but upon a combination of these with the probable exigencies of ages according to the natural and tried course of human affairs. Nothing, therefore, can be more fallacious than to infer the extent of any power proper to be lodged in the National government, from an estimate of its immediate necessities. There ought to be a capacity to provide for future contingencies as they may happen, and as these are illimitable in their nature, so it is impossible safely to limit that capacity."

The time may come, as it has already been here, when it may be desirable to alter the legal-tender. To deny this power to the Federal government is to deny it to any part of our legislative power ; requiring an amendment to the constitution before any change could be made. The objection that if such a power exists it is liable to abuse, has of course much force, but it proves too much since it might be urged in regard to nearly all other powers. If circumstances should ever again arise under which the government should find itself obliged to have recourse to the use of this power, we may be sure it would be resorted to (constitutional amendment or no amendment) and the evil result attending a breach of the constitution would be manifold more than any evil results likely to arise owing to the exercise of the acknowledged power. Moreover, we now see that we must rely on the education of the people in sound doctrines in order to protect us against the evils of the exercise of such a power, instead of on the more or less weak bulwarks of constitutional prohibition, and I, for one, believe in the light of our financial history for the last twenty years, that we are safe in assuming that the people can be trusted in the future as in the past

to maintain a sound currency under all conditions, except possibly those where circumstances would compel a resort to such an evil instrument as an excessive paper currency—no matter what might stand in the constitution.

Whatever one may think of this, however, whatever his views upon the expediency or folly of giving to Congress the power of issuing paper currency, I feel sure that the oftener he considers the question from the only proper point of view, viz. : the legal or constitutional one—the more irresistible will be the conviction that the court, in this last case, has finally given us a decision which will stand the test of time, because, in full harmony with the great principles of constitutional interpretation which were laid down by our early jurists, were followed by all later courts, and have been accepted by the people as fundamental to our political system.

NOTE.

The authorities specially consulted in preparing this paper, aside from the argument before the courts and the opinions of the courts themselves, are the following :

- (1.) Mr. Bancroft's "Plea for the Constitution;"
- (2.) Mr. McMurtrie's "Observations on Mr. Bancroft's Plea;"
- (3.) Articles in Law Magazines, (a) H. H. Neill in *Columbia Jurist*, Vol. II, No. 1; (b) D. H. Chamberlain in *American Law Review*, April 1884; (c) T. H. Talbot in *American Law Review*, Vol. XVIII, p. 618; (d) Prof. Thayer in *Harvard Law Review*, Vol. I; (4.) Elliot's Debates, and similar sources.

Statements of arguments have been taken in some cases almost *verbatim et literatim* from one or another of the above sources.

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